

What is claimed is:

1. A method of detecting a P_2U_2 receptor protein, comprising

contacting a sample containing the P_2U_2 receptor protein with an antibody or antigen binding fragment thereof which specifically binds the P_2U_2 receptor protein; and

detecting binding of the antibody or antigen binding fragment thereof to the P_2U_2 receptor protein in the sample.
2. The method of claim 1, wherein the sample comprises cells or cell membranes comprising the P_2U_2 receptor protein.
3. The method of claim 2, wherein the cells are recombinant cells or the cell membranes are recombinant cell membranes.
4. The method of claim 2, wherein the cells are naturally occurring cells.
5. The method of claim 2, wherein the cells are kidney cells.
6. The method of claim 2, wherein the cells are of megakaryocytic or erythrocytic origin.
7. The method of claim 1, wherein the antibody or antigen binding fragment thereof is coupled to an imaging agent.
8. The method of claim 1, wherein the contacting step comprises administering the antibody or antigen binding fragment to a subject.
9. The method of claim 8, wherein the administering is by systemic administration.

10. The method of claim 9, wherein the systemic administration is selected from the group consisting of intravenous injection, subcutaneous injection, intramuscular injection, intraperitoneal injection, transmucosal administration, and transdermal administration.
11. The method of claim 1, wherein the contacting step comprises contacting the antibody or antigen binding fragment with the sample *in vitro*.
12. The method of claim 1, wherein the antibody is a polyclonal antibody.
13. The method of claim 1, wherein the antibody is a monoclonal antibody.
14. The method of claim 1, wherein the antibody is a recombinant antibody.
15. The method of claim 1, wherein the antigen binding fragment is selected from the group consisting of a Fab fragment, an Fv fragment, a F(ab')₂ fragment, and a Fab' fragment.